

ATPAC UPDATE

AREA OF CONCERN 116-5

7/14/04

SAFETY: No

SUBJECT: Revision to STAR Order 7100.9D

DISCUSSION: STAR Order 7100.9D states; “*STARS Shall: Terminate at an initial approach fix for a standard instrument approach procedure or at a point in space defined by a fix or waypoint. An RNAV STAR shall terminate at a point from which radar vectors may be initiated.*” Also: “*For RNAV STARS that terminate at a point in space, annotate on the chart that radar vectors will be provided; e.g. expect radar vectors to final, and annotate the chart with the lost communication procedure if lost communications procedures differ from 14 CFR 91.185.*”

A review of any number of STARS reveals two common themes regarding the terminating fix. The procedure either ends at the terminus fix or ends at the terminus fix followed by a specified heading.

In the first example, it may be somewhat confusing as to what heading should be flown in the event ATC does not issue a heading upon crossing the terminus fix or if the aircraft has lost communications with ATC. Ask any number of pilots and you will get multiple interpretations. Anything from fly the inbound radial, enter the gold if depicted, or fly the default heading after crossing the fix.

The latter procedure is probably the most common and probably what ATC desires. However, would that be the case if the airplane had been vectored off the procedure and crossed the terminus fix from an angle that varied from the published lateral track? In this scenario it could be quite possible the default heading would direct the aircraft towards other arriving or departing aircraft.

Procedures that end with a specified heading prevent unpredictable flight tracks in the event of lost comm., blocked frequencies, and busy controllers. At a minimum, ALPA believes STARS should end with a specific heading.

Another point of contention is the lack of guidance in the event of lost communications. Most STARS are consistent with their verbiage – “***Expect vectors to final approach course.***” Again, it is somewhat open to interpretation as to how the pilot chooses to proceed to the final approach course and at what point or time the pilot should commence this.

Statistically, lost comm. could be considered a rare occurrence with today’s equipment. This is all the more reason for simplifying procedures for flight crews.

SEA has done an excellent job of terminating their conventional STARs with specific headings **and** depicting Lost Comm procedure information boxes on the chart. There is no question as to the steps the pilot should follow. The terrain at SEA probably dictated the need for specific headings and instructions. Wouldn't it be practical for this to be the standard for the STAR order?

Ideally, LAS has developed "automatic" lost comm. procedures on their RNAV STARs that terminate at an IAF. Three out of four arrivals actually **clear** the lost comm aircraft for the ILS. The pilot does not have to consider ETA or holding instructions. Simply fly the arrival, execute the approach, and land.

The fourth arrival does not terminate at an IAF, but it guides the airplane to within five miles of the airport on a base leg, giving the pilot two options – maintain VFR and land (since the airport will probably be in sight), or follow the lost comm. procedure if IMC.

As more and more RNAV STARs are designed and implemented, ALPA believes there will be a need for procedures to terminate at an IAF. Since this is not the case for most existing procedures, ALPA believes ATPAC should concentrate on addressing a simple approach to fixing the current problem with STAR terminus.

SUGGESTED ATPAC ACTION: That ATPAC review this issue and recommend the FAA revise the STAR Order to reflect more precise guidance regarding the terminus fix and lost communications. In doing this, the following safety benefits should be considered:

- Consistent charting
- Clear and consistent guidance to pilots at the terminus fix of the procedures
- Unambiguous lost communication direction
- Enhanced predictability for ATC in the event of blocked or lost communication after the terminus fix.

Specific recommendations are:

- Published headings should follow the terminus fix.
- Each facility should consider the most efficient heading to use at the terminus, based on traffic flow and runway usage.
- All STARs should contain standard formatted Lost Communication Procedure information boxes.

116—The ATO-R, RNP Program Office had the following comments on the committee's suggestions:

Published headings should follow the terminus fix.

Design guidance provided to procedure specialist incorporates the use of a heading following the terminus fix. Consideration will be given in future revisions FAAO 7100.9D, Appendix 2-b-3 to require the use of a VM path terminator after the last waypoint for those procedures terminating at a point in space. The use of a VM path terminator would provide heading guidance from the coded database. Charting conventions currently support the depiction of the heading for VM legs.

Each facility should consider the most efficient heading to use at the terminus, based on traffic flow and runway usage.

This guidance is included in FAAO 7100.9D, Appendix 5, as part of the design process. The inclusion the Lead Operator as part of the RNAV Implementation Working Group provides feedback on the procedure design and route flyability.

All STARs should contain standard formatted Lost Communication Procedure information boxes.

This recommendation if adopted, should be referred to the Aeronautical Charting Forum (ACF). As a collaborative working group including both FAA and industry experts, the ACF can make recommendations to charting specifications to ensure uniformity.

After discussing the AOC and considering the comments by the RNP Program Office, the committee made the following recommendation:

RECOMMENDATION #1:

Published headings should follow the terminus fix → The FAA draft a DCP for this part of the recommendation.

Each facility should consider the most efficient heading to use at the terminus, based on traffic flow and runway usage → The FAA review this part of the recommendation and take appropriate action.

All STARs should contain standard formatted Lost Communication Procedure information boxes → The FAA draft a DCP for this part of the recommendation and also advise the Aeronautical Charting Forum (ACF) of the committee's actions.

117—After discussion it was decided that this issue would be better addressed by the ACF. Chairman will write a letter to that effect. The ATPAC member on the ACF will provide a briefing at the next meeting.

118—Letter to ACF is being drafted. Update will be provided in April.

119—Letter written from Chairman to the Aviation Charting Forum. No reply was received. Expect update in Anchorage. Next ACF meeting is May 11-12, 2005.

120—No response received from ACF. Committee member also on ACF does not recall this issue being discussed at their May meeting. Update will be provided in October.

121—Update provided to group by Bill Hammett, AFS-420. He indicated that this action was not brought before the ACF.

Discussion by the group led to the conclusion that the action that ATPAC wanted was misunderstood. ACF should address the issue and that some ATPAC members would like to attend the meeting to discuss the issues. The request will be retransmitted to the ACF.

122—Due to time constraints this AOC was not covered at this meeting.

123 – Representative from AOPA will attend the Aviation Charting Forum (ACF) meeting being held this will and report on ATPAC's concern.

124 – Heidi Williams, AOPA, reported on progress from a summary of the ACF wherein John Moore, NACG, will submit a formal response to ATPAC.

125 – ATO-R will check with NACG for their formal response and report at 126.

126 – This item was not reviewed and will be deferred for a report at 127.

127 – This issue was deferred due to an expected response from NACG.

128 - Closed

CURRENT STATUS: ACTION COMPLETE. CLOSED

RECOMMENDATION #1: Published headings should follow the terminus fix.

The FAA draft a DCP for this part of the recommendation.

Each facility should consider the most efficient heading to use at the terminus, based on traffic flow and runway usage. The FAA review this part of the recommendation and take appropriate action.

All STARs should contain standard formatted Lost Communication Procedure information boxes. The FAA draft a DCP for this part of the recommendation and also advise the Aeronautical Charting Forum (ACF) of the committee's actions.

IOU : NA